

Compactness Analysis Report

12/10/2011

Plan Name: Workspace: Senate>>Senate 2001

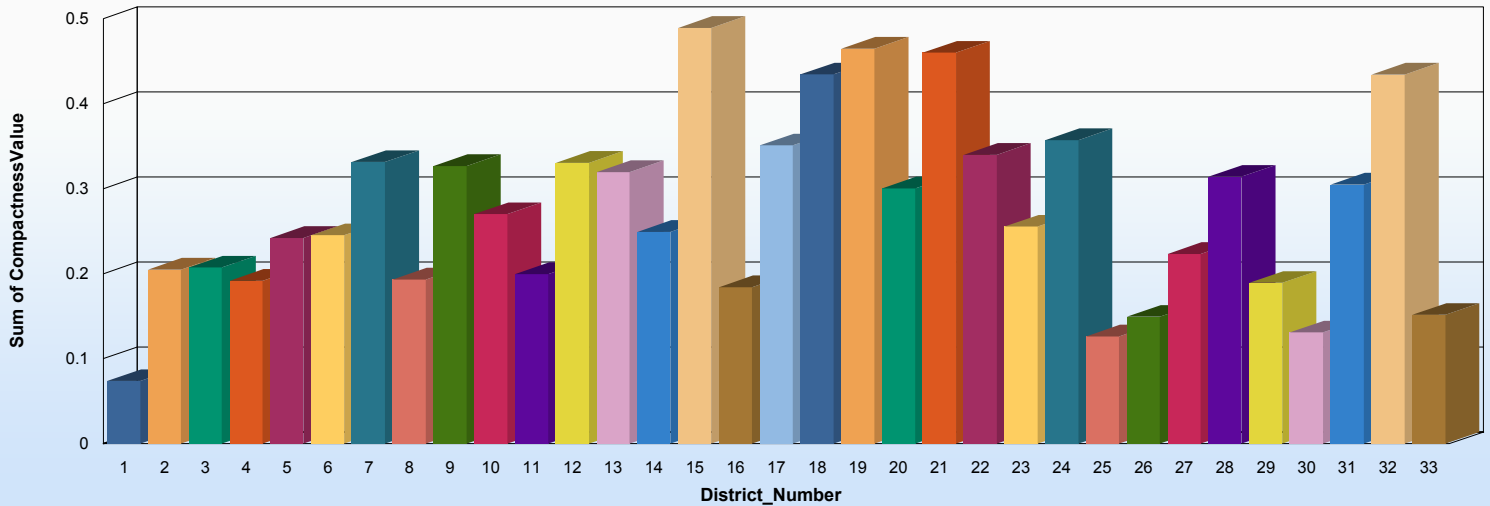
Plan Last Edited on: 12/10/2011 12:40:42 PM

Confidential

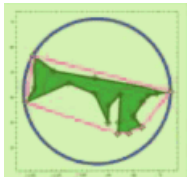
2

Compactness Measure:

Circularity Ratio - Ratio of the area of the District to the area of a circle (the most compact shape) having the same perimeter. That ratio is expressed as $M = 4\pi(\text{area}) / (\text{perimeter})^2$. For a circle, the ratio is one. This



District:	1	Compactness Value:	0.07	As Percent:	7.4%
District:	2	Compactness Value:	0.20	As Percent:	20.5%
District:	3	Compactness Value:	0.21	As Percent:	20.7%
District:	4	Compactness Value:	0.19	As Percent:	19.2%
District:	5	Compactness Value:	0.24	As Percent:	24.2%
District:	6	Compactness Value:	0.25	As Percent:	24.5%
District:	7	Compactness Value:	0.33	As Percent:	33.1%
District:	8	Compactness Value:	0.19	As Percent:	19.3%
District:	9	Compactness Value:	0.33	As Percent:	32.7%
District:	10	Compactness Value:	0.27	As Percent:	27.0%
District:	11	Compactness Value:	0.20	As Percent:	20.0%
District:	12	Compactness Value:	0.33	As Percent:	33.1%
District:	13	Compactness Value:	0.32	As Percent:	31.9%
District:	14	Compactness Value:	0.25	As Percent:	24.9%
District:	15	Compactness Value:	0.49	As Percent:	48.9%
District:	16	Compactness Value:	0.18	As Percent:	18.4%
District:	17	Compactness Value:	0.35	As Percent:	35.1%
District:	18	Compactness Value:	0.43	As Percent:	43.4%
District:	19	Compactness Value:	0.46	As Percent:	46.5%
District:	20	Compactness Value:	0.30	As Percent:	30.0%
District:	21	Compactness Value:	0.46	As Percent:	46.0%
District:	22	Compactness Value:	0.34	As Percent:	34.0%
District:	23	Compactness Value:	0.26	As Percent:	25.5%
District:	24	Compactness Value:	0.36	As Percent:	35.7%
District:	25	Compactness Value:	0.13	As Percent:	12.6%



Compactness Analysis Report

12/10/2011

Plan Name: Workspace: Senate>>Senate 2001

Plan Last Edited on: 12/10/2011 12:40:42 PM

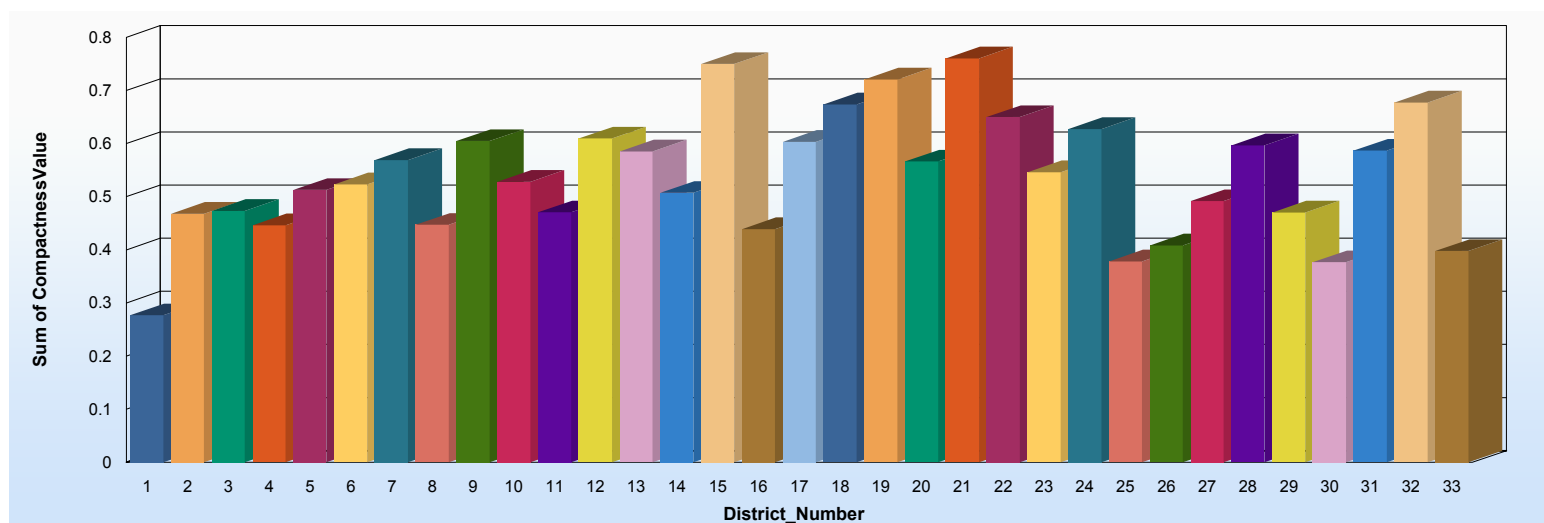
Confidential

2

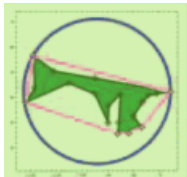
District:	26	Compactness Value:	0.15	As Percent:	14.9%
District:	27	Compactness Value:	0.22	As Percent:	22.3%
District:	28	Compactness Value:	0.31	As Percent:	31.4%
District:	29	Compactness Value:	0.19	As Percent:	18.9%
District:	30	Compactness Value:	0.13	As Percent:	13.1%
District:	31	Compactness Value:	0.30	As Percent:	30.5%
District:	32	Compactness Value:	0.43	As Percent:	43.4%
District:	33	Compactness Value:	0.15	As Percent:	15.2%

Compactness Measure:

Circumference of an equal area circle divided by the perimeter of the district



District:	1	Compactness Value:	0.28	As Percent:	27.7%
District:	2	Compactness Value:	0.47	As Percent:	46.8%
District:	3	Compactness Value:	0.47	As Percent:	47.3%
District:	4	Compactness Value:	0.45	As Percent:	44.6%
District:	5	Compactness Value:	0.51	As Percent:	51.3%
District:	6	Compactness Value:	0.52	As Percent:	52.3%
District:	7	Compactness Value:	0.57	As Percent:	56.9%
District:	8	Compactness Value:	0.45	As Percent:	44.7%
District:	9	Compactness Value:	0.60	As Percent:	60.5%
District:	10	Compactness Value:	0.53	As Percent:	52.8%
District:	11	Compactness Value:	0.47	As Percent:	47.1%
District:	12	Compactness Value:	0.61	As Percent:	61.0%
District:	13	Compactness Value:	0.59	As Percent:	58.5%
District:	14	Compactness Value:	0.51	As Percent:	50.7%
District:	15	Compactness Value:	0.75	As Percent:	75.0%
District:	16	Compactness Value:	0.44	As Percent:	43.9%
District:	17	Compactness Value:	0.60	As Percent:	60.3%
District:	18	Compactness Value:	0.67	As Percent:	67.4%



Compactness Analysis Report

12/10/2011

Plan Name: Workspace: Senate>>Senate 2001

Plan Last Edited on: 12/10/2011 12:40:42 PM

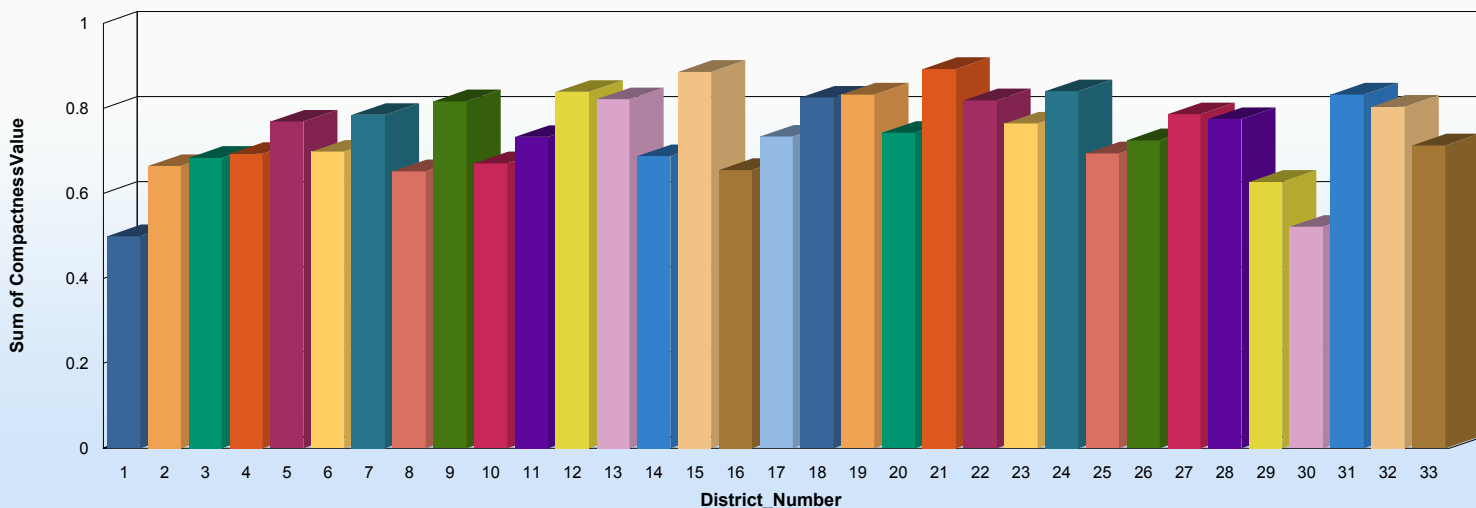
Confidential

2

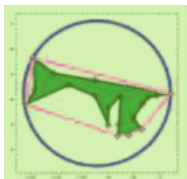
District:	19	Compactness Value:	0.72	As Percent:	72.1%
District:	20	Compactness Value:	0.57	As Percent:	56.6%
District:	21	Compactness Value:	0.76	As Percent:	76.0%
District:	22	Compactness Value:	0.65	As Percent:	65.0%
District:	23	Compactness Value:	0.55	As Percent:	54.6%
District:	24	Compactness Value:	0.63	As Percent:	62.7%
District:	25	Compactness Value:	0.38	As Percent:	37.8%
District:	26	Compactness Value:	0.41	As Percent:	40.8%
District:	27	Compactness Value:	0.49	As Percent:	49.2%
District:	28	Compactness Value:	0.60	As Percent:	59.7%
District:	29	Compactness Value:	0.47	As Percent:	47.0%
District:	30	Compactness Value:	0.38	As Percent:	37.7%
District:	31	Compactness Value:	0.59	As Percent:	58.7%
District:	32	Compactness Value:	0.68	As Percent:	67.7%
District:	33	Compactness Value:	0.40	As Percent:	39.8%

Compactness Measure:

District area divided by the area of the district's Convex Hull. This method is also know as the Schwartzberg test.



District:	1	Compactness Value:	0.50	As Percent:	49.9%
District:	2	Compactness Value:	0.66	As Percent:	66.4%
District:	3	Compactness Value:	0.68	As Percent:	68.3%
District:	4	Compactness Value:	0.69	As Percent:	69.3%
District:	5	Compactness Value:	0.77	As Percent:	76.9%
District:	6	Compactness Value:	0.70	As Percent:	69.8%
District:	7	Compactness Value:	0.78	As Percent:	78.5%
District:	8	Compactness Value:	0.65	As Percent:	65.2%
District:	9	Compactness Value:	0.82	As Percent:	81.7%
District:	10	Compactness Value:	0.67	As Percent:	67.1%
District:	11	Compactness Value:	0.73	As Percent:	73.3%



Compactness Analysis Report

12/10/2011

Plan Name: Workspace: Senate>>Senate 2001

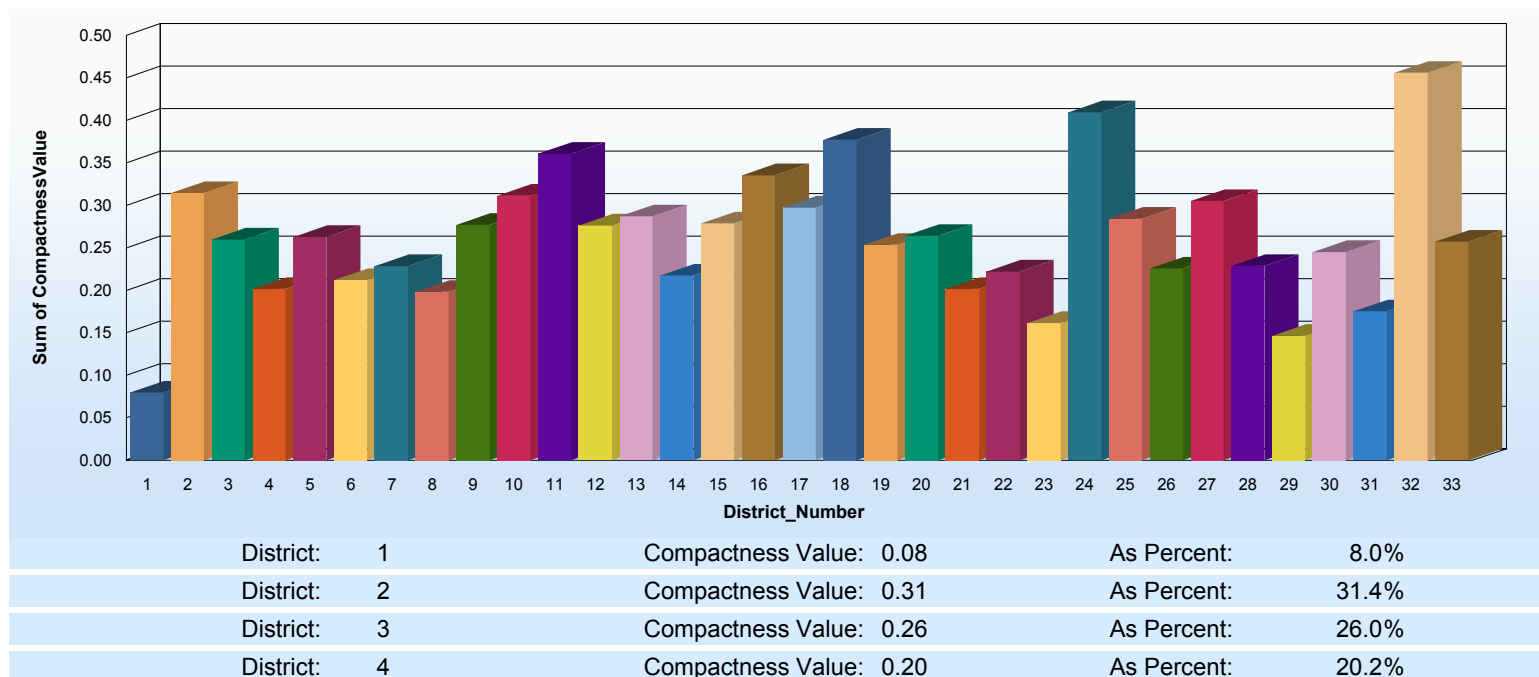
Plan Last Edited on: 12/10/2011 12:40:42 PM

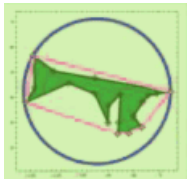
Confidential

District:	12	Compactness Value:	0.84	As Percent:	83.9%
District:	13	Compactness Value:	0.82	As Percent:	82.2%
District:	14	Compactness Value:	0.69	As Percent:	68.8%
District:	15	Compactness Value:	0.89	As Percent:	88.6%
District:	16	Compactness Value:	0.65	As Percent:	65.5%
District:	17	Compactness Value:	0.73	As Percent:	73.4%
District:	18	Compactness Value:	0.83	As Percent:	82.5%
District:	19	Compactness Value:	0.83	As Percent:	83.2%
District:	20	Compactness Value:	0.74	As Percent:	74.2%
District:	21	Compactness Value:	0.89	As Percent:	89.2%
District:	22	Compactness Value:	0.82	As Percent:	81.9%
District:	23	Compactness Value:	0.76	As Percent:	76.4%
District:	24	Compactness Value:	0.84	As Percent:	84.0%
District:	25	Compactness Value:	0.69	As Percent:	69.4%
District:	26	Compactness Value:	0.72	As Percent:	72.5%
District:	27	Compactness Value:	0.79	As Percent:	78.6%
District:	28	Compactness Value:	0.77	As Percent:	77.5%
District:	29	Compactness Value:	0.63	As Percent:	62.7%
District:	30	Compactness Value:	0.52	As Percent:	52.1%
District:	31	Compactness Value:	0.83	As Percent:	83.2%
District:	32	Compactness Value:	0.80	As Percent:	80.4%
District:	33	Compactness Value:	0.71	As Percent:	71.3%

Compactness Measure:

District area divided by the area of the minimum circle bounding the district. This method is also known as the Roeck or Ehrenberg test.





Compactness Analysis Report

12/10/2011

Plan Name: Workspace: Senate>>Senate 2001

Plan Last Edited on: 12/10/2011 12:40:42 PM

Confidential

2

District:	5	Compactness Value:	0.26	As Percent:	26.3%
District:	6	Compactness Value:	0.21	As Percent:	21.2%
District:	7	Compactness Value:	0.23	As Percent:	22.8%
District:	8	Compactness Value:	0.20	As Percent:	19.8%
District:	9	Compactness Value:	0.28	As Percent:	27.7%
District:	10	Compactness Value:	0.31	As Percent:	31.1%
District:	11	Compactness Value:	0.36	As Percent:	36.1%
District:	12	Compactness Value:	0.28	As Percent:	27.6%
District:	13	Compactness Value:	0.29	As Percent:	28.7%
District:	14	Compactness Value:	0.22	As Percent:	21.7%
District:	15	Compactness Value:	0.28	As Percent:	27.9%
District:	16	Compactness Value:	0.34	As Percent:	33.5%
District:	17	Compactness Value:	0.30	As Percent:	29.7%
District:	18	Compactness Value:	0.38	As Percent:	37.7%
District:	19	Compactness Value:	0.25	As Percent:	25.4%
District:	20	Compactness Value:	0.26	As Percent:	26.4%
District:	21	Compactness Value:	0.20	As Percent:	20.2%
District:	22	Compactness Value:	0.22	As Percent:	22.2%
District:	23	Compactness Value:	0.16	As Percent:	16.2%
District:	24	Compactness Value:	0.41	As Percent:	40.9%
District:	25	Compactness Value:	0.28	As Percent:	28.4%
District:	26	Compactness Value:	0.23	As Percent:	22.6%
District:	27	Compactness Value:	0.31	As Percent:	30.5%
District:	28	Compactness Value:	0.23	As Percent:	22.9%
District:	29	Compactness Value:	0.15	As Percent:	14.7%
District:	30	Compactness Value:	0.25	As Percent:	24.5%
District:	31	Compactness Value:	0.18	As Percent:	17.5%
District:	32	Compactness Value:	0.46	As Percent:	45.6%
District:	33	Compactness Value:	0.26	As Percent:	25.7%

Total Perimeter for all Districts 31,222.54 Miles